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FOR: Apple® II, II+, IIe

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T.A.C. is Avalon Hill's trademark name for its Microcomputer Game of Tactical Armor Command.

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# T.A.C.

## Tactical Armor Command

## GAME RULES

**SET-UP**

Once the program finishes loading, instructions will flash onto the screen, one at a time, designed to get you started. In cases where keying in your response does not advance the instructions, pressing [RETURN] will accomplish it.

1. SELECT (N)EW or (O)LD GAME?
Press (N) unless you wish to restore a saved game.

2. SELECT (1) or (2) PLAYER GAME?
Press (1) if you wish to play against the computer. Press (2) if you've got a live opponent.

3. ENTER YOUR SKILL LEVEL (1) (2) (3) (4)?
Beginners should start at the easiest level (1). Advance to the more difficult levels only as you gain experience.

4. SELECT SCENARIO?
There are five scenarios presented from which to choose. Each present a different and fresh approach to the game. Beginners should start with the first 'Meeting Engagement,' since it requires no preparation to play.

5. HOW MANY POINTS FOR TEAM #1? #2?
You select a value from 12 to 224. This amount will constitute your purchasing fund to be used to buy military equipment for your combat team. You (solitaire) or your opponent (two player) picks the amount for team 2. Giving both sides the same amount ensures a balanced game. It is recommended that an amount between 120 and 150 points be selected. This will provide sufficient funds to buy an interesting selection of weapons without over-burdening play. Henceforth, these weapons will be referred to as "units."

6. ENTER NATIONALITY OF PLAYER ONE, TWO?
This program provides four distinct groupings of armored vehicles, troops and artillery—one for each of the four major participants in the Second World War (Germany, Russia, Britain and USA). Whichever nation you select, it will be from this selection of units that you will build your combat team. See VEHICLE LISTINGS at the end of this manual.
Any two nations may be selected to fight. You are not restricted to the historical alliances *(e.g. Britain can fight USA or Russia as well as Germany.)*

7. THE LIST OF UNITS FOR THE FIRST NATION SELECTED WILL APPEAR ON THE SCREEN.

You may purchase any combination of these units within your budget up to a total of eight units maximum. A running total of your remaining revenue is maintained at the top of the screen. When you have completed your purchases type an (Ø) to stop. You will then be asked if you want to make any changes. Press (N) if you don't wish to and (Y) if you do.

8. THE LIST OF UNITS FOR THE SECOND NATION SELECTED WILL APPEAR ON THE SCREEN.

You (solitaire) or your opponent (two player) purchase the units for the second combat team.

NOTE: In a two player game, each player should purchase his units without his opponent looking on.

## UNIT DESCRIPTIONS

**TANKS:** Tanks range in size from (L)ight through (M)edium to (H)eavy. Lighter tanks have greater speed but poorer armor protection in comparison to heavier tanks. All tanks can rotate their main gun 360°. Tanks have three different methods of attack–direct fire, indirect fire and overrun assault.

**ASSAULT GUNS:** The assault gun is a low silhouette tank. Its gun has a limited traverse of 23° to either side of its unit heading. The assault gun is a little harder to hit than a tank. Assault guns can direct fire, indirect fire and overrun assault.

**FIELD GUNS:** Represents one gun, gun crew and transport vehicle. A field gun can both direct fire and indirect fire.

**INFANTRY:** Represents one squad of eight men equipped with an armor piercing weapon and a transport vehicle. The squad is indivisible and is always treated as a single object. However, the transport vehicle can be destroyed without affecting the squad. Infantry can direct fire, firefight and close assault.

AT THIS POINT YOU ARE READY TO START PLAY!

## SUMMARY OF PLAY

A combat team conducts its turn, unit by unit. The computer selects a unit and puts it on the screen. You then can search with it, move it and fire its weapon. Once the unit has finished, the computer will call up another unit to command. This procedure continues until all units of the team have had a chance to operate. The computer then resolves all combat and displays the result.

Both combat teams alternate taking turns until one eliminates the other or you decide to stop play. If you wish to save the game at this point, see QUIT/SAVE GAME section on page 11.

A turn is of very short duration (approximately 30 seconds real time). Consequently, all activities performed in a turn are considered to begin at the same time, even though they are conducted sequentially. In other words, all actions of all units of both teams that occur in a turn are considered to start exactly at the same time. Each unit's turn is divided into two phases–*'Search'* and *'Maneuver and Fire'*. While a unit is operating on the screen, it is called the *'active'* unit.



## SEARCH PHASE

The *'active'* unit's search for other units is calculated automatically by the computer at the start of this phase. You may choose to see the results of the search if you wish in this phase. There are two ways of viewing the results. Tactical search allows you to see all visible units in their individual sectors. Global search displays the positions of all visible units on the overall battlefield map. You may choose to see the spotted units by either tactical or global display or both. Whether you choose to look at the results of the search or not has no effect on the actual search. This is done automatically every turn.

**T.A.C.** is played on a map of a wooded plain that has been subdivided into sectors of equal area. At the beginning of the turn, the screen will graphically display the first *'active'* unit in the sector it occupies. In the lower left corner appears the identification number of the sector.

1. PRESS ANY KEY

Important data pertaining to the *'active'* unit will appear along the bottom of the screen.

EXAMPLE:

| | | HE | WF | SC | MS | CS |
|---|---|---|---|---|---|---|
| GE #1 | TIGER | 270 | 270 | C3 | 23 | 0 |

Reading from left to right, the unit's nationality is presented first, followed by its identification number and its name. The direction the unit is heading (HE) is always stated in degrees of the compass (with North always pointing to the top of the screen). The weapon's facing (WF) marks the direction the unit's weapon is pointing (also in degrees of the compass). The sector (SC) displays the identification number of the sector occupied by the *'active'* unit. Maximum allowable speed (MS) indicates the greatest possible distance that the unit can move in one turn. Current speed (CS) shows the distance the unit moved in the previous turn.

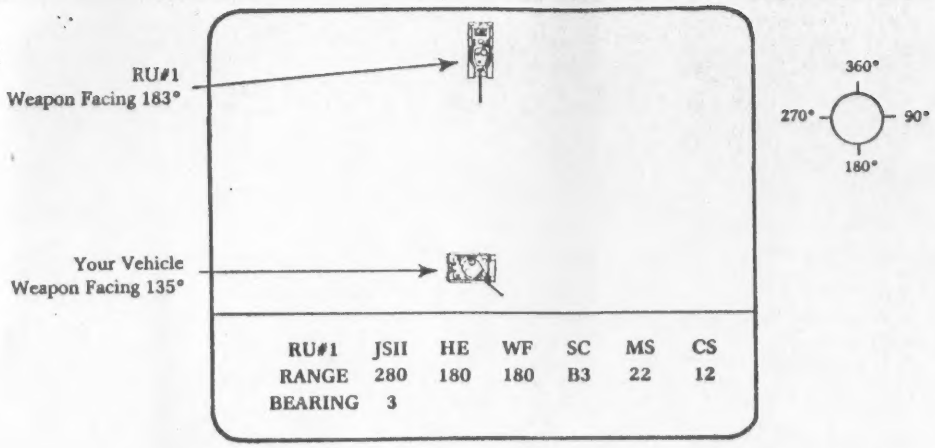
2. ENTER TACTICAL SIGHTING?: (Y)es (N)o

You now have the chance to see the results of the *'active'* unit's search. In tactical sighting you can see all visible units in the sectors they occupy. If you wish to skip this type of search, press 'N'. Pressing 'Y' will cause text data of each unit sighted to appear, one at a time, on the bottom of the screen.

EXAMPLE:

| | | | | | | |
|---|---|---|---|---|---|---|
| RU #1 | JS-II | HE | WF | SC | MS | CS |
| RANGE | 280 | 180 | 180 | B3 | 22 | 12 |
| Bearing | 357 | | | | | |

Two new pieces of information are provided. *Range* reveals the distance between the *'active'* unit and the sighted unit. *Bearing* indicates the direction (in degrees) from the *'active'* unit to the spotted unit.




The stat for your vehicle would be:

| GE#1 | TIGER | HE | WF | SC | MS | CS |
|---|---|---|---|---|---|---|
| | | 90 | 135 | B3 | 23 | 15 |

The German #1 Tiger tank commander spots a Russian (RU#1 JSII) at a distance of 280 yards and almost directly north of his position. It is moving towards him from sector B3 and its gun needs a slight adjustment of just 3° to train directly on the Tiger tank.

The unit information first appears in text along the bottom of the screen. You will then be given the chance of viewing the unit in its sector, if you wish to see it; otherwise, hitting the *space bar* will bring the next sighted unit to the screen.

3. PRESS (G)LOBAL or (SPC) to continue.

Pressing (G) will cause the entire battlefield map to appear along with all sighted units (shown as squares). The *'active'* unit is colored *black*. All other sighted units are colored the same as their side's units on the tactical map. Large blue splotch markers indicate smoke. At the start, just the *'active'* unit is shown. By hitting the *space bar* (SPC), you can review, one at a time, each unit sighted that turn.

Once all units have been seen, the message SIGHTING PHASE IS NOW COMPLETE will appear on the screen signaling the end of this phase. Pressing the *space bar* will provide you one last look at your overall situation. Hit the *space bar* once more and you proceed directly to the Maneuver and Fire Phase.

## MANEUVER AND FIRE PHASE

The *'active'* unit may now be ordered to fire its weapon, change speed and move. You are able to control movement in arcade fashion. The screen shows the *'active'* unit and all other visible units in its sector.



The number of things that different units can do in a turn will vary according to the type of unit, its condition and other extraneous factors. Whatever instructions appear for the *'active'* unit in this phase are determined by the computer as being all those relevant to it and its current situation. If a certain option is omitted, it is because the unit cannot perform it.

Hitting any key will begin the phase!

1. ENTER TARGET ID & #?

If there are any visible enemy units, you may target one for direct fire by the *'active'* unit. (Visible units are only revealed during the *'active'* unit's Search Phase and are not shown here. Therefore, if you can't rely on memory, it is good practice to write down the nationality and I.D. # of all potential targets during Tactical or Global Search.) You select the target by keying in its nationality and identification number *(e.g. RU#1)*. If there are no visible targets, the program will automatically skip this instruction. The computer will not accept any target that is not visible. You must type the information exactly as shown here – *the two letter nationality code, the pound symbol (#) and I.D. number* to be accepted *(e.g. RU#1)*. If you wish not to direct fire press [RETURN].

2. FIRE (D)IRECT or (T)RACK THE TARGET.

Only if you've selected a target will this instruction appear. You may have the *'active'* unit fire immediately at the target unit by pressing (D) or you may choose just to track the target unit, instead, by pressing (T). Aiming will improve the chance of hitting the target when the *'active'* unit fires at it in a later turn.

3. ENTER DESIRED SPEED 0 TO *maximum turn speed.*

The *'active'* unit's maximum turn speed is the sum of its current speed (CS) and its maximum acceleration rate (never to exceed its maximum allowable speed). You may select any speed for the *'active'* unit between 0 and its maximum turn speed. This now becomes the unit's current speed. If you accidentally go to next instruction by hitting [RETURN] before keying in the speed, the computer will automatically set the speed at the maximum allowable.

The term maximum acceleration rate is important to know but is never given on the screen. You can figure out each unit's maximum acceleration rate by the following method. All units start the game with a current speed of 0. So, in its first turn, the *'active'* unit's acceleration rate is the same as its maximum turn speed. By doubling this rate, you determine the unit's maximum safe speed. A unit traveling between its maximum safe speed and maximum allowable speed runs the risk of damaging itself.

EXAMPLE:

The active unit has a maximum allowable speed (MS) of 24. On its first turn, it can move from 0 to 10 mph. Ten mph, therefore, is its maximum acceleration rate. Double this number, or twenty mph, is its maximum safe speed. Each turn the unit travels between 21 and 24 mph, it risks damaging itself.

Note, for all units travelling in woods, the maximum safe speed is 10. TO PROCEED TO THE NEXT INSTRUCTION YOU MUST HIT [RETURN].

4. ENTER WEAPON FACING?

You can change the direction that the *'active'* unit's weapon is facing by keying in the desired new facing in degrees. If the unit has selected a target for direct fire, the weapon must be ordered to point in the same direction as the target's bearing, otherwise the direct fire will not take place. The target's bearing is displayed at the bottom of the screen as a reminder.

Tanks are able to rotate their weapons to any new direction. An assault gun may only rotate its weapon 23° on either side of its facing. For example, if an assault gun is heading directly east (90°), its gun can range from 67° to 113° and no farther. Like tanks, dismounted field guns can rotate to point in any direction. However, the longer time needed to turn it can reduce the accuracy of the fire. Hit [RETURN] to proceed.

5. PRESS (S) TO FIRE SMOKE MORTAR!

This instruction appears only if the *'active'* unit has smoke capability. By pressing (S), you cause the *'active'* unit to be surrounded by a protective screen of smoke. Hit [RETURN] to proceed.

6. PRESS (I) TO ENTER INDIRECT FIRE!

This instruction will appear only if the unit is capable of performing indirect fire and has not already been ordered to direct fire this turn. Pressing (I) will initiate the procedure.

Unlike direct fire, which is targeted at a specific unit, indirect fire is directed at a specific spot on the map. You will first be asked to pick a sector to which you wish to direct the fire, *(Key in the sector I.D. number).* The screen will display the sector with a flashing crosshair at its center. This crosshair can be maneuvered by using the control yoke *(see MOVEMENT for instructions on how to use the control yoke).* When you have positioned the crosshairs exactly where you wish, press [RETURN] to lock the shot at that spot.

There are two limitations to indirect fire. The *'active'* unit cannot fire at a spot within 700 meters of its present location. Neither may it fire at a spot more then 45° from its weapon facing. If the selected location is illegal, after pressing [RETURN], the screen will repeat the instruction 'PRESS (I) FOR INDIRECT FIRE' letting you try again. If the target location is accepted, you must decide on the type of round to be fired – (H)igh explosive or (S)moke.

NOTE: Different factors can affect the aim of indirect fire. The round will not always land where you instruct it to.

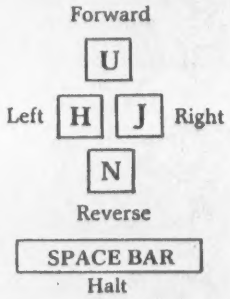
## MOVEMENT

Once the last instruction has appeared, and the screen is clear, the *'active'* unit is ready to move. There will be no warning. Pressing any key will start the unit moving. It will move at a fixed rate until it reaches the distance you selected for it this phase. Once movement has started it cannot be temporarily halted but must run to conclusion. You must be ready to maneuver the unit once it starts moving. A unit's movement can be permanently stopped at any point by hitting the space bar. The unit will be unable to move again until its next turn.



You can maneuver the unit by a keyboard device called the *'control yoke'*. The four keys illustrated control the direction the unit will travel. Pressing (U) will allow the unit to move straight forward. Each time you press (J), the unit will make a turn to the right. By hitting (H), the unit will make a turn to the left. Pressing (N) will put the unit into reverse. The unit's acceleration rate is also its maximum reverse rate. Pressing (N) when a unit is moving at a higher speed will automatically break the unit to its reverse rate. Pressing the *space bar* will stop the unit on the spot, setting its current speed to 0.

**Vehicle Movement**



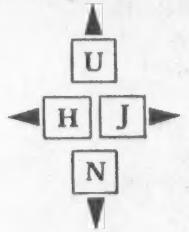

Units that have a current speed (CS) of 0 are still able to turn in place by pressing (L)eft or (R)ight. (Maneuvering in this way or pressing (F) will cause the unit's data on the bottom of the screen to disappear. By pressing the *space bar,* it will reappear.) Pressing the *space bar* will not end the turn. When you are finished movement, you must press [RETURN] to proceed to the next unit.

## SPECIAL MOVEMENT SITUATIONS

1. Infantry and field guns can either be loaded onto a transport vehicle or unloaded. These units will be given an instruction in their turns asking whether they wish to change status from loaded to unloaded or vice-versa.

2. Unloaded infantry may move but using a procedure different from that of other units. Pressing (U) will have them move directly north to top of screen (360°); (J) directly east (90°); (N) directly south (180°); (H) directly west (270°).

**Infantry Movement**




3. Field guns cannot be moved while unloaded but can be rotated in place as described for units at zero speed.

4. Units will not be allowed to move off the mapboard unless allowed by the scenario.

## SPECIAL COMBAT

Almost all combat is a consequence of one unit firing at another. Some special types of combat however, are not initiated by you or your opponent but automatically by the computer in certain specific situations.

1. OVERRUN

An armored unit will overrun a dismounted (soft) infantry squad or field gun when it gets within a certain range as determined by the computer, providing that the unit was targeted in the preceding Maneuver and Fire phase. If successful, the overrun will be acknowledged in the Combat Resolution phase. Overruns are devastating to soft targets.

2. CLOSE ASSAULT

Just like an overrun but in this case a dismounted infantry charges a vehicle at close range rather than vice-versa. The conditions needed to trigger this attack are also determined by the computer.

3. FIREFIGHT

Infantry directly assaulting another soft unit. Note when defending against a firefight it is important to be attacking back.

## NATURAL AND MAN-MADE FEATURES

1. SMOKE

This is used defensively to obstruct vision. A smoke mortar delivers enough smoke to entirely surround a unit. Smoke is stationary and lasts but one turn. Any smoke between two units can reduce sighting. The computer determines whether the units see each other or not. A good rule of thumb states that if at least 50% of a smoke cloud is between two units, they cannot see one another.

2. WOODS

A unit can never be stopped by a tree but travelling in woods at a speed greater than 10 could risk damage. A unit in the woods can have its vision restricted depending upon how deep inside it is. By the same token, units looking into the woods may have trouble seeing anything. A quiet unit (one that has neither moved nor fired in its turn) in the woods cannot be spotted at distances greater than 300 meters. Quiet infantry in the woods cannot be spotted at distances greater than 150 meters.

3. MINES

All scenarios (but the first) allow the placement of minefields. These are placed during the preparation phase of the scenario. In scenarios 2, 3, and 4, one of the teams places the minefield on the map. In scenario 5, the computer secretly places the minefield, so that its exact location is unknown to either team.

A minefield occupies one sector. There are approximately 400 mines in a minefield. Only anti-vehicular mines are used. A dismounted infantry squad or field gun and crew cannot be damaged by mines. Infantry squads are assumed to have an engineering component capable of clearing mines. You can use dismounted infantry to clear a path through a minefield just by moving through. Sometimes, though, a detonated mine may force the squad to stop for the rest of its turn. Vehicles of both teams are vulnerable to mines; there is no favoritism.

4. IMPROVED POSITIONS

In certain scenarios, improved positions may be used. When a unit is in an improved position it cannot be seen at distances greater than 150 meters. A unit in an improved position who moves or uses direct fire, loses its improved status never to be regained again. A unit in an improved position is less vulnerable to direct fire but may be destroyed by indirect fire.

## SCENARIOS

SCENARIO 1 MEETING ENGAGEMENT

No preparation is needed for this scenario. Team 1 starts in sector A1; team 2 starts in sector E3.

SCENARIO 2 STATIC DEFENSE

Player 2 positions his units anywhere in rows D or E. He also places a minefield anywhere in rows C, D, or E. All units in team 2 start in improved positions. Player 1 begins in Sector A1 as in the first scenario.

SCENARIO 3 BREAK-OUT

The set-up is identical to scenario 2 except that there is no minefield. To win, player 1 must exit his units off the mapboard at the lower right corner of sector E3. A unit will be prevented from exiting at speeds greater than its acceleration rate. NOTE: the unit will not disappear until the next turn.

SCENARIO 4 REAR GUARD

Player 1 positions his units anywhere in rows A or B. Player 1 may also place a minefield anywhere in rows A, B or C. Player 1 may choose any nationality except Russian. Player 2 must be Russian. This is a no win situation for Player 1; for each time he destroys a Russian unit, it is replaced by a JSII tank. The idea is to win a strategic victory by destroying large amounts of enemy units.

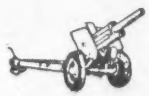
SCENARIO 5 STALEMATE

Both players 1 and 2 position their units in rows A,B and D,E respectively. Both teams start in improved positions. The computer places a minefield in row C only. When playing solitaire, the computer will move team 2 as if unaware of the location of the minefield.

## QUIT/SAVE GAME

When a player is prompted to begin a turn he may press (CONTROL Q) to initiate the End game/Save game feature. You may save the game at its current position and continue playing; or save the game but quit; or end the game and receive the victory results.

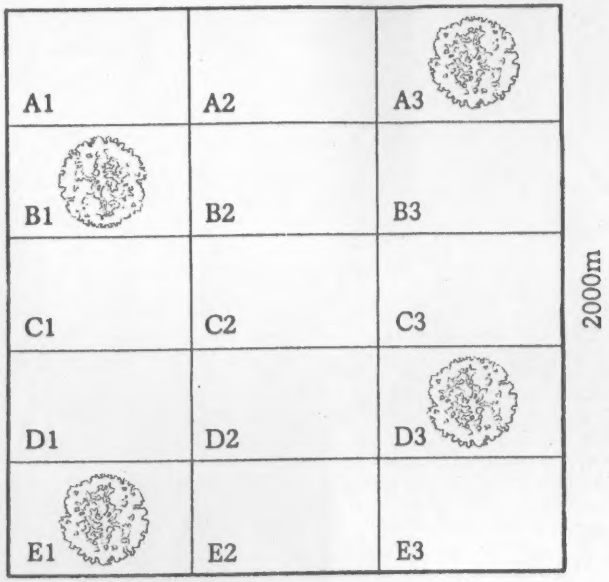
Be sure to have a formatted DOS 3.3 disk ready to save your game too.



## POINTS OF INTEREST

### 1. DISTANCE AND SCALE

All distances are measured in meters. The entire battlefield map is 1800 x 2000 meters and has been subdivided into 15 sectors each 400 x 600 meters.




The pictures of the vehicles that you see on the screen are shown much larger than their true size. If presented in proper scale, they would appear as indefinable specks. This is true for the global display as well as the tactical display. The computer, though, does treat the vehicles in the proper size. Consequently, a tank can appear to be running into another tank or a tree without receiving any damage – an important point to keep in mind.

When trying to get a handle on speed, it is more useful to consider it as a measure of distance rather than velocity. Speed is indicated in miles per hour and 1 mph is the same as travelling a distance of 2.5 meters per turn. So a vehicle moving at a current speed of 12 will travel a distance of 30 meters in a turn.

### 2. TIME

Even though the computer receives information one unit at a time, it processes the data as if it were occurring in the real time. All units start their turns at the same time and perform their activities simultaneously. The computer assigns each activity a specific time length that corresponds to its real time situation and resolves the activities second by second. So, for example, a unit with its weapon already trained on a target will get its shot off sooner than another unit who would have to rotate its weapon into position first. Each turn takes 30 seconds, so you may find that a unit is unable to complete all activities assigned to it since they can exceed the turn limit.



### 3. UNIT PERFORMANCE

Every unit has been carefully researched and its characteristics programmed into the game. Each unit is rated for its armor – upper and lower front, side and rear and turret – front, side and rear. The computer takes into account a variety of factors when resolving the result of a round fired. As in real life, your computer will consider many parameters in determining the accuracy of the shot: the speed and maneuver of both the firing and target unit, the aim, the angle of deflection of shot on armor, the slope and thickness of the armor, the type of gun, the range and so on. This resolution process is much too complicated to present. It will be up to you, the player, to learn by experience a unit's abilities and how to maximize them. This is the heart of the game. Good players will know the tricks; they will know what is the best range to fire, what targets are too heavily armored for which guns and so on. A good knowledge of history will help. Here's one trick just as an example: When closing the range to a target that can hurt you, it is better to zig-zag (tack) than to move straight toward it. This might take a little longer to accomplish but you will most likely survive to get some shots of your own in.

Each unit is provided with unlimited fuel and ammo. (It is assumed that every unit has more than enough to outlast the span of the scenario.) A unit can lose fuel as a result of damage.

### 4. AIMING

After tracking a target for two turns, a unit can no longer improve its aim. Continued tracking just maintains the aim at that level. If, for any reason, a unit is unable to maintain its tracking before fire, it loses its aim advantage. This can happen if you don't order (T)rack one turn or the target moves into woods and out of your line of sight.

### 5. FIRE CAPABILITY

Many units have several different weapons. A unit may only fire, though, at one target in a turn. The computer will decide which weapon will be used against the target. For instance, a tank armed with both a main gun and machine gun and ordered to fire at another tank will use its main gun. However, if ordered to fire at dismounted infantry will use its machine gun instead.

### 6. FIELD GUNS AND INFANTRY

Field guns and infantry have the option of being mounted on a transport vehicle or dismounted. When mounted, they can move quickly from place-to-place but cannot defend or attack for themselves. They are wholly dependent upon the transport for their survival. If the transport is destroyed so are they. While dismounted, a field gun can rotate and fire its weapon but cannot move; an infantry squad can fire its weapons and can move but at a very slow speed (being on foot). While dismounted, these units are considered soft targets and are very difficult to damage with anti-tank weapons.

Dismounted infantry can move in only one of four directions (north, east, south, and west) in a turn. To get the direction, use the following keys: (J) = 90° or east, (N) = 180° or south, (H) = 270° or west, and (U) = 360° or north. See graphic on page 9.

Field guns and their crews are considered indivisible. They can receive no partial damage. Either the entire unit is fine or it is destroyed. This does not hold true for the transport. It can be destroyed without damaging the dismounted force.

If fired upon, dismounted infantry can suffer casualties and lose equipment. If the squad's halftrack is destroyed, the squad will lose the added firepower of the halftrack's machinegun. The infantry squad will not be removed from play until the last man is eliminated.

## 7. DAMAGE

Getting a hit on a target does not automatically translate into damage. The computer compares the size of the round with the location of the hit, the thickness of the armor at that point and the angle of deflection and computes the consequence. If the round penetrates, the computer determines whether it is sufficient to knock out the tank, damage part of it or cause no damage at all. Basically, damage will cause a vehicle to either slow down, lose fuel or lock the turret. Firepower is never affected unless the vehicle is knocked out entirely. In most cases, the computer will inform you of the consequences of a hit but only if you would be aware of it immediately in real life. Sometimes the damage is not known immediately (like a ruptured fuel line). Then time will soon make you aware of it (the vehicle suddenly stops moving).

## 8. SEARCH

It is important to reiterate a point relating to search which can easily be glossed over in the study of the rules. All units automatically search and spot all other units within view at the start of each turn whether you opt to see the results or not. This means that even if you didn't bother to search, your units still did and they can fire at targets they saw. Of course, you can't be sure which they are; but, for purposes of saving time you might not want to repeat looking at a unit that you know hasn't moved.

## 9. HINTS

a. Moving units are harder to hit.

b. While moving, a unit's fire accuracy decreases.

c. While moving, a unit should try to keep its weapon trained on the target, it helps.

d. Soft units (unloaded infantry and field guns) are harder to see at 1200m or more.

e. The fewer adjustments a unit has to make before firing, the better its chances of getting the shot off before any return fire.

f. This game was designed to permit mistakes under pressure. If by chance you hit the wrong key when moving you only have yourself to blame. It makes for more realistic play.

g. Although units can travel at maximum speed, it is not advisable to do so except in an emergency for they risk damage doing so.

## 10. RECORD PAD

For your convenience a Record Pad is enclosed. On it, you may wish to record sighted enemy units and any information about them that you feel is necessary. There is also space provided to record information about your own force composition, locations, etc.

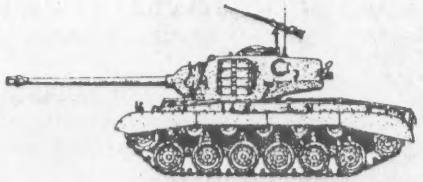


## 11. T.A.C. VEHICLE LISTINGS

Following is a list of the Armored Fighting Vehicles (AFV's) that may be used in the game. This is by no means a comprehensive list of the AFV's that saw service in World War II. Rather, it is a pool of some of the common (and some rare) fighting machines of the four major European combatants in the years 1939 through 1945. The first name for each vehicle given below is how it appears on your screen in the unit selection chart shown before the game begins. Following that is any other designation or common nickname for the vehicle. To the side of each illustration is the letter **T** or **A**, indicating whether or not that particular vehicle's main gun is in a tank or turreted (**T**) mounting, or a fixed or Assault Gun (**A**) type mounting. The difference between Tanks and Assault Guns is explained on page 4.

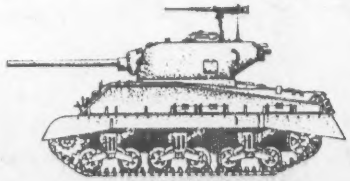
### U.S.A.

**T**



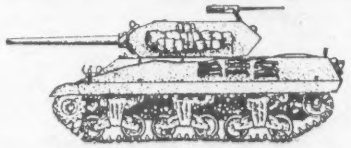
**PERSHING** (M26): Easily the best American tank produced during the war. At 46 tons, the American tank crews felt it nearly the equal of the Tiger in a straight shooting match and very much more mobile. This tank, with its 90mm gun, had its first combat experience at Elsdorf, Germany, in February of 1945.

**T**



**COBRA** (M4A3E2 Sherman "Jumbo"): The M4A3E2 was actually an up-armored Sherman used to temporarily fill the Heavy tank role when it was realized that the Pershing would not be ready for service until early in 1945. The "Jumbo", as it was commonly known, weighed 42 tons but still carried the high-velocity 76mm gun.

**T**



**M-10** (Wolverine): An open-turret tank destroyer based on the Sherman chassis. It was equipped with a 76.2mm gun with a high rate of fire in a turret mount. The M-10 first entered service in 1942 and was produced in large quantities. A number were supplied to Britain and were subsequently up-gunned (see "Achilles" in British listings).

T

**SHERMAN** (M4A4): Main allied battle tank of WWII. It was a very functional design and was adopted to an amazing number of models and functions. Its 76mm gun could not penetrate the frontal armor of Panthers and Tigers, but it was more than a match for most other German panzers. More than 7,000 were produced.

T

**STUART** (M5A1): A light tank of 16 tons, the Stuart entered service in 1943 and was armed with a 37mm gun. Used commonly in the recon role.

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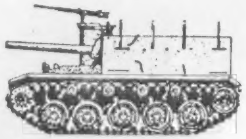

**M4/105** (M37 HMC): A howitzer motor carriage based on the M24 Chassis and sporting a 105mm M4 howitzer in a limited traverse mounting. Originally intended to replace the M7 HMC ("Priest"), only a few saw service in the war. The M4/105 weighed 16 tons.

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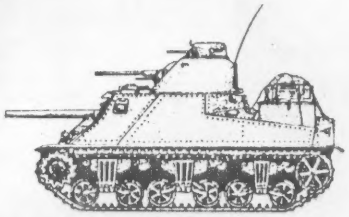

**GRANT** (M3A3): Quickly designed in 1941 to give the U.S. a competitive medium tank, it retained the by now antiquated notion of a limited traverse gun built into the hull. This was the 75mm gun. A smaller 37mm gun was mounted in a turret. It weighed 30 tons.

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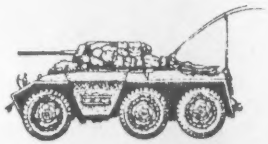

**GREYHOUND** (M8): This armored car first entered service in 1943. It was the most extensively used U.S. armored car during the war. The Greyhound had a turreted 37mm gun and could travel 55mph on the road.





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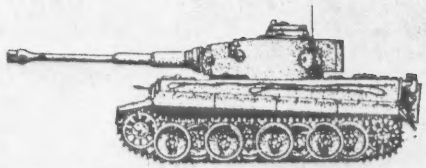
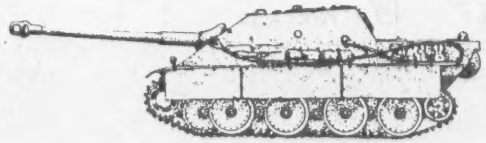


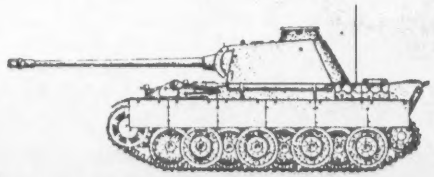
**TIGER** (PzKw VIe "Tiger I"): The Tiger I entered service in late 1942, seeing its first combat experience around Leningrad. Weighing 56 tons, it was the biggest of the German tanks produced in large quantities (over 1,300 produced). It was heavily armored and consequently slow. Its 88mm high velocity gun, however, could knock out any vehicle an enemy put up against it.

A



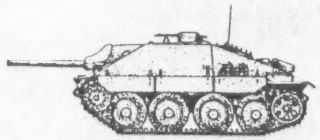
**JAG PZV** (Jagdpanther): A superior tank hunter based on the Panther chassis and fitted with a limited traverse, but very dangerous, 88mm gun. (In effect giving the Panther (see below) a better gun at the expense of a rotating turret.) Weighing 46 tons, almost 400 Jagdpanthers were produced.

T



**PANTHER** (PzKw V): Perhaps the best all-around tank of WWII, the Panther first saw action in large numbers at the great tank battle of Kursk in July, 1943. It was not as heavily armored as the Tiger, but its super-high velocity 76mm gun took a heavy toll in enemy armor. Weighing in at 45 tons, it had excellent design and was very mobile for its size.

A



**HETZER** (Panzerjaeger 38[t]): This tank hunter, based on the Czech PzKw 38(t), first entered service in 1944. The Hetzer was adequately armored, provided a low silhouette and had a hull-mounted but effective 75mm gun. Weighing just 16 tons, the Hetzer was the brainchild of Col. Gen. Heinz Guderian, the Inspector of Armored Units in 1943.

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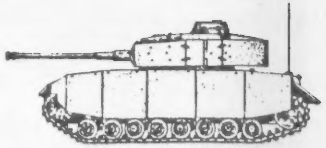

**PZK IV** (Panzerkampfwagen IV): The workhorse of the German army, the Panzer IV was produced in greater numbers than any other German tank. At the start of hostilities the PzKw IV was equipped with the short 75mm gun, but by 1943 it was up-gunned with the long 75mm and its role changed from infantry support to pure armor. The variety shown above is the PzKw IVh with armor skirts and weighing 25 tons.

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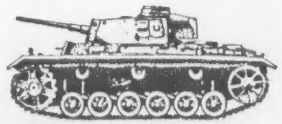

**PZAUSF** (PzKw IIIf): The main German battle tank at the start of the war, it weighed 20 tons and carried a 50mm gun. By 1943 it was obsolete and largely replaced by the PzKw IV.

A

**MARDER** (III): The Marder III was an 11 ton "open air" tank destroyer based (like the Hetzer) on the proven Czech 38(t) light tank chassis. Armed with a captured Russian 76.2mm gun, was strictly a stop-gap measure designed to deal with the superior armor encountered by German troops in Russia. It also saw distinguished service in North Africa in 1942.

T

**PUMA** (Sd Kfz 234/2): Not a tank, but a highly mobile and well armored, eight-wheeled car. Armed with a turreted high velocity 50mm gun and weighing 12 tons, the Puma saw action from the steppes of Russia, to the deserts of North Africa. The Puma was twice as fast as most tracked tanks.





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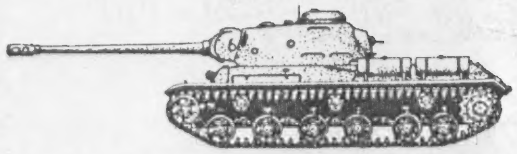

**JS II** (Joseph Stalin II): The most powerful tank in the game. Introduced in 1944, the JS II's deadly 122mm gun could penetrate any armor then in existence. It was heavy (50.6 tons), heavily armored and, consequently, slow. But then, what could stand up to it? In 1944 alone, over 2200 were turned out.

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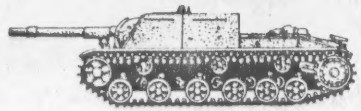

**SU152:** Introduced in 1943, this heavy assault gun sported a powerful 152mm bow-mounted howitzer. It was built on a KV chassis and weighed 46 tons. A dreaded sight for any poor Panzer Grenadier.

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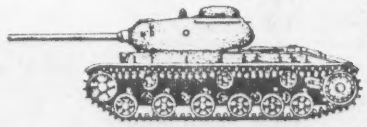

**KV85:** Although heavier than the JSII (at 51 tons), the KV had a smaller (85mm) gun and was mainly a stop-gap pending arrival of the heavy JS tank. It was well armored, however, and subsequently slow.

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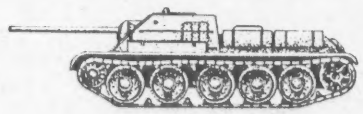

**SU85:** A self-propelled tank destroyer based on the T34 chassis and armed with a high velocity 85mm gun. The SU85 weighed 30 tons and was widely used by the Soviets.

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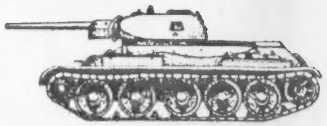

**T34/76C:** The most revolutionary tank of the war. This 31 ton fast tank with sloped armor had a 76mm gun that shocked the Germans when it first appeared in 1941. At that time they had no weapon except the FLAK 88 that could stop it. The German Panther tank was specifically designed to counter the T34. Thousands of T34's saw service throughout the war.

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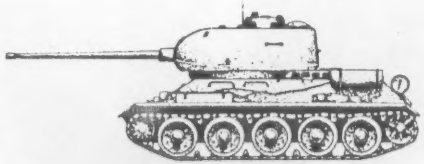
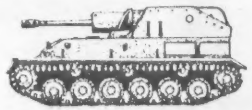


**T34/85:** With thicker turret armor than the T34/76C, the T34/85 was also equipped with an 85mm gun designed to penetrate the frontal armor of the new German Panther. Weighing 35 tons, it first saw action in late 1943.

A



**SU76:** An early "open air" assault gun, it was introduced in 1942 and used frequently in the infantry support role, as it was lightly armored. Armed with a limited traverse 76mm gun, it was rendered obsolete by the German heavy armor by 1944.

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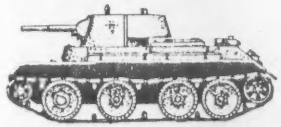

**BT5/5A:** An early Russian light tank that was very fast but also thinly armored. During the '41 German invasion it had the advantage of being able to run away from the slower panzers. This model of the BT carried a low velocity 76mm gun and weighed 12 tons.





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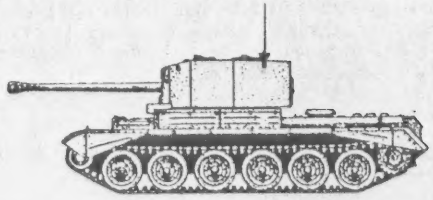

**A30/MK1** (Challenger): Initially designed in 1942 to carry the large 17pdr gun. This weapon was intended to give the British parity with the German 75mm and 88mm guns. Numerous problems were exposed in getting it into production and it saw only limited service from late 1944 on. It weighed 36 tons.

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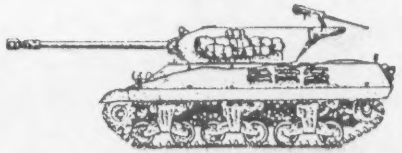

**ACHILLES:** The British-modified version of the M-10 tank destroyer to fit their 17pdr anti-tank gun in late 1944. The result was a 33 ton vehicle that performed well against German tanks in France and Germany.

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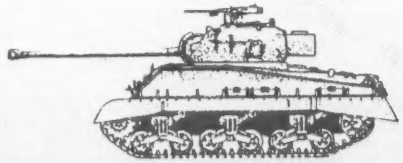

**SHERMAN VC** (Firefly): The British depended heavily upon the American-built Shermans to supplement their tank program. Since they were having problems building a tank to carry their new 17pdr gun, they modified the Sherman to carry it. This stop-gap measure proved very successful and the Firefly became the "big" tank for the British in the latter part of the war.

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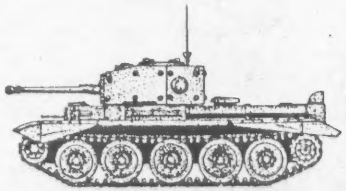

**CROMWELL:** The main British-built tank used in the last year of the war. Unable to support the 17pdr gun, it was fitted with a 75mm gun that was unable to handle the Panther or Tiger tanks. The Cromwell weighed 31 tons.

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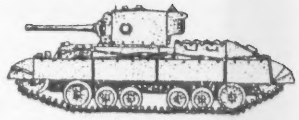

**VALIANT** (Valentine VIII): The Valentine was designed as an infantry support tank, not a main battle tank. Hence, speed was not of critical importance and attention was given to armor protection. The Valiant carried a 6pdr gun and weighed 20 tons.

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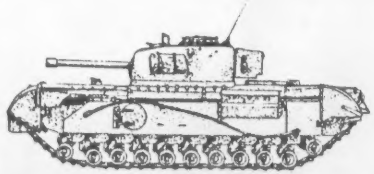

**MARK VII** (Churchill VII): This was a largely redesigned version of the Churchill with thicker armor and a new cast/welded heavy turret. The main difference, however, was the replacement of the 6pdr gun with a 75mm gun.

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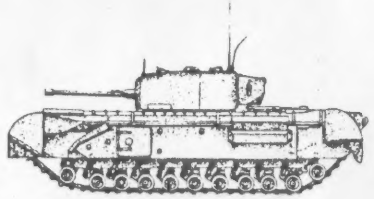

**CH/MK V** (actually the Churchill IV Mk5): The most important British infantry support tank of the war. It was a heavy (44 tons), well armored but slow. Its 6pdr (57mm) gun however was not effective against the later panzers.

T

**DAIMLER:** An 8 ton armored car, it fired a 40mm gun from a turret and like other armored cars in the game could travel much faster than tracked vehicles.

## LOADING INSTRUCTIONS

**Apple® Disk:** The Apple diskette is an "Auto Boot" diskette. Put the disk into your disk drive and "boot" the system.

NOTE: The Mockingboard™ Sound Board can be utilized to maximize your enjoyment of **TAC.** Use slot #4 if you have access to this device.

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™Sweet Micro Systems

### IF YOU CANNOT LOAD THE PROGRAM

If the program cannot be loaded, send the software, with a complete description of the problem (what type of computer you have, what the computer says, if anything, when you try to load the software or play the game, and what you did to try to get it to load.) to:

**Avalon Hill Microcomputer Games**
4517 Harford Road
Baltimore, Maryland 21214

Defective software will be replaced.

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**The Avalon Hill Game Company**
Consumer Relations
4517 Harford Road, Baltimore, MD 21214

### QUESTIONS ON PLAY

The clarity of these rules has been verified by *Software Testers of Universal Microcomputer Programmers (STUMP)* and deemed *"complete"* in all facets of instruction. Please re-read them in areas that seem unclear at first reading. Questions on play can be answered by the factory *only* upon receipt of a self-addressed envelope bearing first-class postage.